WHAT IS CLAIMED IS:

1. A method for manufacturing a semiconductor device comprising:

forming a layer of silicon dioxide on a silicon carbide substrate; and

incorporating nitrogen at the silicon dioxide/silicon carbide interface.

2. The method of Claim 1, wherein the silicon carbide substrate is 4H-SiC.

3. The method of Claim 1, wherein the silicon carbide substrate is 6H-SiC.

4. The method of Claim 1, wherein the silicon carbide substrate is doped with a p-type or n-type dopant.

5. The method of Claim 1, wherein the layer of silicon dioxide is formed by a method comprising:

cleaning the silicon carbide substrate; and

oxidizing the silicon carbide substrate.

6. The method of Claim 5, wherein the silicon carbide substrate is cleaned with 10% HF.

7. The method of Claim 5, wherein the silicon carbide substrate is thermally oxidized.

8. The method of Claim 7, wherein the silicon carbide substrate is oxidized at between about 900 °C and about 1150 °C.

9. The method of Claim 1, wherein the layer of silicon dioxide is greater than about 10 Å thick.

10. The method of Claim 1, wherein nitrogen is incorporated by annealing the semiconductor device in nitric oxide or nitrous oxide.

11. The method of Claim 10, wherein the semiconductor device is annealed at between about 950 °C and about 1200 °C for between about 1 and about 4 hours.

12. The method of Claim 11, wherein the semiconductor device is annealed at about 1175 °C.

13. The method of Claim 1, wherein nitrogen is incorporated by annealing the semiconductor device in ammonia.

14. The method of Claim 13, wherein the semiconductor device is annealed at about between 950 °C and about 1200 °C for about 4 hours.

15. The method of Claim 14, wherein the semiconductor device is annealed at about 1175 °C.

16. The method of Claim 1, wherein the areal density of nitrogen at the silicon dioxide/silicon carbide interface is between about 0.5×10^{14} cm^{-2} and about 1×10^{16} cm^{-2}.

17. The method of Claim 16, wherein the areal density of nitrogen at the silicon dioxide/silicon carbide interface is between about 1×10^{14} cm^{-2} and about 2×10^{15} cm^{-2}.

18. The method of Claim 1, wherein the maximum concentration of nitrogen at the silicon dioxide/ silicon carbide interface is about 0.5%.

19. A semiconductor device comprising:

a silicon carbide substrate;

a layer of silicon dioxide disposed on the silicon carbide substrate; and

a region of substantial nitrogen concentration at the silicon dioxide/silicon carbide interface.

20. The semiconductor device of Claim 19, wherein the silicon carbide substrate is 4H-SiC.

21. The semiconductor device of Claim 19, wherein the silicon carbide substrate is 6H-SiC.

21. The semiconductor device of Claim 18, wherein the silicon carbide substrate is doped with a p-type or a n-type dopant.

22. The semiconductor device of Claim 1, wherein the areal density of nitrogen at the silicon dioxide/silicon carbide interface is between about 0.5×10^{14} cm^{-2} and about 1×10^{16} cm^{-2}.

23. The semiconductor device of Claim 22, wherein the areal density of nitrogen at the silicon dioxide/silicon carbide interface is between about 1×10^{14} cm^{-2} and about 2×10^{15} cm^{-2}.

24. The semiconductor device of Claim 1, wherein the maximum concentration of nitrogen at the silicon dioxide/ silicon carbide interface is about 0.5%.

25. The semiconductor device of Claim 1, wherein the layer of silicon dioxide is greater than about 10 Å thick.